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THE GENESEE FARMER.

SATURDAY, JAN. 16, 1836.

HEDGES.

(Concluded from page 10.)

PREPARATION OF SEED.

The seeds of thorns are prepared for planting as follows: They are, as soon as gathered, to be carefully extricated from the berries by moderate pounding with a wooden pestle, after which they are to be washed perfectly clean from the pulp; they are then to be mixed with sand and put in a shallow box with holes in its bottom, which is to be placed in a cold bleak situation, secure from mice. In this way, seeds of the Washington thorn become fit for planting, in one winter. But they have been prepared much more expeditiously by the following process. Immerse the stones, previously rubbed and washed, in hot water to swell them, then expose them at night to freeze, and afterwards thaw them in the sun; repeat this for four or five days, and they will be open and fit for planting. The seeds of the Newcastle or cockspur thorn which require eighteen months, are prepared by placing them in a shallow pit under the north eaves of a building, where they are plentifully supplied with moisture and excluded from the rays of the sun. Probably the freezing and thawing process by artificial means would much accelerate the preparation of shese seeds also. The American crab, and the Buckthorn grow readily from seed. The honey locust also grows from seed, but it is recommended to pour boiling water on them, and let them remain in it twenty-four hours, the water being kept warm. The method of preparing seed of the red cedar was given in the 47th number of this paper.

PREPARATION OF THE SOIL.

A strip of land, where the hedge is intended to stand, several feet wide, should be trench ploughed, at least one foot deep, and if not naturally very fertile, should be made so by applying a quantity of well rotted manure. If this ground can be conveniently protected for a number of years, the best way is to plant the seed at once upon it, putting in a large quantity; the young trees will not then require transplanting, and all but the most vigorous may be pulled up in a year or two; thus, no vacant spaces will be left, and those trees which are left remaining, may be of equal size. The practice of planting on a bank of earth with a ditch, though well adapted for the moist climate of England, is very unsuitable to this country, as drouths are one of the greatest evils hedges have here to encounter. But as a bank and ditch serve as a partial barrier while the hedge is young, some, to obviate this difficulty, have planted their hedges at the foot of a bank; but here another evil arises,—the snow drifts deeply round the hedge, and furnishes a safe retreat for mice, which are almost sure to injure it by gnawing the bark. Hedges should therefore be always planted on the flat surface of the ground.

SOWING AND TRANSPLANTING.

Where it is desirable that a hedge should not stand many years on the ground without affording self protection, the seeds should be planted in nurseries until the trees attain a proper size for transplanting. When the time arrives for setting them in the hedge row, the ground should be prepared as a above directed, and a wide, deep trench made by passing the plough several times through the middle of the strip; the young trees are then to be taken from the nursery, preserving the roots as entire as possible, and before they are suffered to get dry, they are to be placed in the trench, and fine mellow earth shaken in round them, until the roots are covered. If the ground is sufficiently pulverized, a plough may then be passed along on each side to fill the trench, afterwards levelling the surface and treading the soil about them. If any of the roots are too long to go in the trench, it is much better to cut the ends off, than to crowd them in by bending, which always injures them. Before setting the trees, they should be assorted according to size, in order that the largest may be put on the poorest land, and the smallest on the most fertile; in this way, the hedge will grow evenly.

As the growth of trees can never be healthy and vigorous when crowded in too small space, they are to be set as far asunder in the hedge as security will admit; the thorns should be at least nine or ten inches apart. For the same reason a single row should always be planted instead of double rows.

SPARE PLANTS.

A tenth part or more of the best plants in the nursery, should be selected and set in wide rows, and at the same distance in the row, to fill vacancies which may occur in the hedge from the loss of trees by transplanting or otherwise. They are to be hoed and manured well, so as to keep them ahead of the hedge, that when set in a gap they may keep pace with their neighbors.

CULTIVATING.

No hedge can ever possibly succeed unless kept free from weeds and grass during the early period of its growth; the soil is therefore to be kept well cleared from them. The culture should be precisely the same as that of a drilled row of Indian corn.

PRUNING AND PLASHING.

Pruning should be performed either in autumn or very early in spring, but on no account during the growing season. Some are in the practice of cutting off the tops while the trees are small, to induce them to become thick and send out side branches; but this is an injurious practice; the top should not be cut off until the main stem has acquired sufficient strength to resist an infuriated bull. But as light is essential to vegetation, hedges entirely unpruned are apt to become open near the ground, in consequence of the lower branches becoming covered by the upper ones. The lower branches should therefore be sparingly shaded; and to effect this object, the hedge is to be trimmed with a slope on each side, so as to form a sharp edge at top; above this the main stems should be trimmed upwards two or three feet, and then to be allowed to spread themselves out without restraint. In a hedge pruned in this manner the upper branches will not shut out the light from the lower ones.*

Plashing or wattling is for the purpose of affording additional strength to the hedge.—When performed on the thorn hedges in England, the workmen's hands and arms are protected by long gloves of horse hide. It is not an unfrequent practice to cut the main stems half off, in order to assist bending them aside for this purpose, but this generally occasions decay, and is almost sure to ruin the hedge. A far preferable method is to set the trees alternately inclined in opposite directions, so that less bending is required, or to perform the operation while they are young and flexible.

Pruning is either performed with a sharp instrument resembling a *bill hook*, or with shears. When the former is used, always cut *upwards*, and then a smooth surface is left; cutting downwards, on the contrary, splits the branches, leaves a rough surface, and materially injures the hedge.

Many hedges in this country have continued to flourish and promise well for several years age, young, but afterwards in more advanced while they are found to decline and often to die. This is frequently owing either to drouth in consequence of the hedge being planted on a bank, or to their being set too closely together. Young trees may grow vigorously for a time in a small space, but when they increase in size, greater room becomes necessary. We have not heard that the remedy which is employed for this evil in England, has ever been adopted in this country; it is there found completely effectual. It consists in sawing or cutting off at the ground, nearly all the main stems, leaving only a few upright ones, (say at the distance of two feet asunder) between which the amputated branches are interwoven to afford the necessary protection till the hedge has grown again. A great num-

* Lord Kaims, in his "Gentleman Farmer," says, "I have the experience of three hedges trained twelve years as follows. The first has been annually pruned top and sides. The *sides* of the second have been pruned, but the *top* left entire. The third was left to grow without any pruning. The first is at present about four feet broad and thick from top to bottom; but weak in its stems and unable to resist any horned beast. The second is strong in its stems, and close from top to bottom. The third is also strong in its stems, but for two feet up bare of lateral branches, which have been destroyed by the overshadowing of those above, depriving them of both rain and air."

ber of young shoots spring up from the old roots, and form a thicker hedge than before. Some of the English hedges have thus continued hundreds of years.

INFLUENCE OF TREES ON HEDGES.

Trees should never be introduced into hedge rows, as they are sometimes done for ornament. Their shade always injures them. Lord Kaims says they have been the destruction of hedges in England. Black walnut has been found to be particularly injurious; instances being recorded of hedge thorns being killed by them at nearly a rod distance.

GENERAL REMARKS.

There are still many intelligent individuals who doubt the profits and even the practicability of forming good hedges in this country. But when it is considered how necessary a selection of materials and proper management are, and how few of those who have undertaken the cultivation of them have attended to *all* important particulars, it is not surprising that discouragements should arise. Many have denounced all kinds of hedges from the failure of the English black and white thorns which appear not to be adapted to this country; others have done the same from a trial of other plants equally unsuitable; some have met with disappointment from a want of due preparation of the soil; as many by allowing them to be overrun by grass and weeds; a great number of failures have been caused by crowding the trees too closely together, and probably not a few by exposing them to drouths upon an elevated bank of earth; some hedges have been killed by being overrun by large trees; many have been ruined by too close and too frequent pruning, and at wrong seasons of the year; many have become useless by not being pruned at all; and a very great number have proved unsuccessful from a number of these causes combined. When the subject shall have more generally engaged the attention of intelligent farmers, and the adaptation of different plants to various soils, and different regions, proved by experiment, we have little doubt that hedges will be found not only practicable but profitable. And the additional beauty which will be given to the scenery of the country, when it shall be diversified by walls of verdure, is not a trifling consideration to any person of intelligence and taste.

In the mean time, we would recommend to those who are willing to sacrifice the very common desire of *immediate* profit, for future good, to commence hedges on a moderate scale in different parts of the country, in order to ascertain the effects of soils, climate, and local circumstances, and of different treatment, and carefully and minutely to record all failures and their causes, as a caution to others. In this way a fund of information could be acquired, which might tend greatly to lessen the enormous expense required for enclosing the improved land of this country.

FRUIT TREES

Surrounded by snow, especially if deep or in drifts, are very liable to be destroyed or injured or girdled by mice, and the danger is increased if they stand in or near grass land. The most efficient measure to prevent injury, which can be taken at this season, is to tread or beat the snow firmly about them, which prevents the access of these animals to the trunk of the tree as they do not approach them when they cannot do it under cover of the snow, and near the surface of the ground.

ON SEASONING SAUSAGES.

A lady has suggested to us that the old method of seasoning sausages is attended with much inconvenience. For instance, when the meat is chopped *without weighing*, the seasoning must be put in *by guess*. Care must be taken of course, not to put in *too much* at first; and perhaps in nine cases out of ten it will be found after tasting that there is *too little*. The chopped meat must then be sprinkled a second time, and the whole batch chopped over again for the purpose of mixing it thoroughly.

Now there are labor-saving calculations as well as labor-saving machines; and we are assured that the following proportions have invariably been found to be right: For one hundred pounds of meat, take three pounds of salt, ten ounces of sage, and ten ounces of pepper, all finely powdered, and sprinkle them over the meat before it is chopped. Every part during this process will be intimately intermixed.

The same proportions hold in all cases. Thus for twenty pounds of meat, take nine ounces and a half of salt, two ounces of sage, and two ounces of pepper. The old rule of *cutting and trying* among carpenters, is not more troublesome than *seasoning and tasting* among sausage makers.

The Small Northern Indian Corn.

At page 329 of our last volume, we made some remarks on this variety. It is well known to those who have traveled through several degrees of latitude in the United States, that Indian Corn varies in height with the climate; and so far as we have observed, the ears in the south are shorter and thicker, and the grains are more compressed and elongated. The sort commonly cultivated in the Genesee country is a dwarf in comparison with these kinds. Travelers from the south, on viewing its humble stature, have been incredulous or amazed when told of its productiveness; and it is now with great satisfaction that we are able to announce that a fair experiment has been made with this variety in a southern climate. To our correspondent whom we mentioned at page 329, we are indebted for the following particulars:

"The closing of this letter has been delayed until we finished the gathering of my little eight-rowed northern corn. Its early maturity had induced us to begin feeding it before other corn was ripe enough; and while I was absent, my men fed more of it than I intended. On my return there was only one corner of the lot remaining, and this was inferior to the other part. To-day we harvested thirty-one bushels from thirty-two square perches; and one basket being shelled this evening, measured half a bushel and nearly one quart of shelled corn, which would give almost *eighty bushels to the acre*. I am quite confident that the best of the lot would have measured *one huedred bushels to the acre*.

"My other Indian corn is of large growth, but from present appearances it will fall short of fifty bushels to the acre; yet there was not one of my neighbors who would believe that the little northern corn was the most productive; and I presume it would now be difficult to convince them of this fact."

THE GENESEE FARMER.

We would advise all our patrons who wish to preserve our numbers for binding, immediately on receiving them to take out the creases with a hot smoothing-iron, and never allow them to be folded afterwards. This may be effectually done by first dampening the paper by drawing a wet sponge over the creases. When treated in this manner they will make a very neat volume.

If this precaution however, should be omitted till the end of the year, we would then advise to have them made *perfectly smooth* before they are sent to the book-binders,—otherwise they make a loose flabby volume.

Every farmer ought to have a Library; and among his books there surely ought to be some that relate to his profession as an agriculturist. No man ought to suppose that he can always remember all that he reads. However, even if he should never want to read again the hints and suggestions which we have taken so much pains to write and to select, he will have heirs to whom such a legacy as a bound volume of the Genesee Farmer would be valuable. It requires very little labor and attention to save the papers, and not more than forty or fifty cents to have them neatly bound and lettered.

THE SNOW STORM.

Snow in Rochester commenced at 9 o'clock on the 8th inst. The wind for five days previous had been south and east, with scarcely any variation. The snow at first mingled with rain and amalgamated with mud, as we had had no freezing weather for some days. This laid the foundation for good sleighing, and the superstructure accumulated as rapidly as was ever known in this place. Probably three feet of snow fell, but the mild temperature made it pack by its own weight, and the whole measured, when the snowing ceased, about eighteen inches, viz: on the 8th, one foot, and on the 9th and 10th, when it ceased, six inches. On the morning of the 10th the whole was locked in its position by the freezing of a slight mist, which glazed the entire surface and prevented any drifting. We have now fine sleighing and a fair prospect of its continuance.

A letter from our correspondent at Otisco, Onondaga county, says:

"As it is probable from the direction of the wind, and the long continuance of the late unprecedented snow storm, that it will have been extensively felt in other parts of the country, I have been induced to put the particulars of its commencement, &c. on record, for the purpose of comparison with the statements of others. The storm commenced here about 2 o'clock on the morning of the 8th, (Friday,) the wind about E. in which direction, varying a little to the S. E., it had been for twenty-four hours previous. It was a mixture of hail and rain, freezing on the trees, houses, &c. until about 7 o'clock, when snow began to fall, the

wind at the same time slowly moving to the N. E. and N., where it remained with scarcely a perceptible variation, and that to the E. until Monday afternoon, when it changed more to the N. W. During all this time the storm continued with scarcely any abatement in violence. On Sunday, for a short time, there was hail and fine rain mixed with the snow, and on Monday the snow subsided into a mist, which, by forming a slight crust, prevented its driftiug. At the conclusion of the storm, the snow was 3½ to 4 feet deep, where it fell undisturbed; more than has ever been known to fall here in a single storm. How far the *tail* of the comet is to be held accountable for the extraordinary atmospheric phenomenon of the present season, such as floods, freshets, and storms, must be left for philosophers, by a comparison with preceding appearances, to determine."

In Utica the snow fell to the depth of about four feet, and in Albany two feet.

From the Cultivator.

Agricultural Report for 1835.

The season, as a whole, has been cold and dry, and consequently a late one. Natural vegetation was from ten to fourteen days later than usual. The spring was so dry, that the grasses, sensibly injured by the drouth and cold of the winter, did not get their accustomed early growth; and from the scarcity of forage generally experienced, the scanty herbage of the meadows was fed off too late in the spring as a matter of necessity. They did not recover their accustomed vigor. Winter grain withstood the severities of the winter better than the grasses, looked tolerable well when the sping opened, and maintained their good appearance. Indian corn, which habit has rendered almost indispensable in the economy of our farms, was not generally planted so early, by ten to fourteen days, as in ordinary years, on account of the backwardness of spring, and it had many subsequent difficulties to encounter, which have tended greatly to lessen its product. The season has been more propitious to other crops, particularly to oats and potatoes. Yet on the whole, the products of our agriculture are less than a medium yield, as is evidenced by their high prices in market.

Wheat, we believe, afforded a fair average yield in most of the districts of secondary formation, where it constitues the great staple. In other districts the result was less favorable. In the south, the product was seriously dimimished by the Hessian fly; while in this vicinity, and to the north of us, the grain worm took at least one half of the crop. The quality of the grain was good; and there has been a manifest improvement, which we hope will continue to progress, in selecting clean seed. The extra price one pays for clean seed, weighs but as a feather against the advantages of a clean crop. Our apprehensions from the grain worm are in no wise diminished. We have tried the preventive means which have been recommended without any sensible benefit. We hardly know of a more afflicting calamity that could happen to our state than the extension of this exil, as now experienced here, to our western counties. And what is to prevent it? Is not the subject one of sufficient importance to call for legislative inquiry?

Hay has not been two-thirds, and in some districts not one-fourth, of an ordinary crop, from the causes which we have in part explained,—the want of the early and latter rain, and the severe cold of the preceding winter,—causes which human prudence could neither foresee nor guard against. If there is any profitable suggestion which we can make, growing out of the failure of this crop, it is that of renovating old meadows, by subjecting them to the plough and an alternation of crops. So far as our personal observation will serve as a criterion, old grass grounds fell off in their product much more than grounds recently laid down, on our own lands three to one. This disappointment in the hay crop is however likely, we think, to do a vast amount of good—by coercing us to more economical modes of feeding it to our cattle, and to the better husbanding our means—and by extending the culture of roots. The practice of feeding at stacks and in open yards, or even in common racks, where the cattle tread and waste nearly one half of the forage, is giving way to the better system of feeding in mangers, to which the cattle are tied, and where nothing is lost. The stacks and shucks of corn have been better saved, and if cut, as they are in many instances, they are affording an excellent substitute for hay. We give to-day a cut and description of a yard rack, well calculated to promote economy in fodder. The hay cutter is coming into general use.

Indian corn, as we have observed, was planted late, and was very generally and seriously injured by the grub-worm. The replanted portion did not come to maturity before the frosts of Sept. 14, 15—the mean temperature of the summer having been some degrees cooler than ordinary. The frost of the 4th of August also destroyed much in elevated districts, and upon the margins of small streams. Nor were these the only difficulties the crop had to encounter: the warm humid weather of October seemed to saturate the cob with moisture, or to prevent its becoming dry, and caused moldiness in the grain; and in many cases where this was not fully ripened, absolute putrefaction. This was not only the case at the north, but extended so far south as Virginia. We note the fact here, that the reader may compare it with his own practice and its results, that we cut our corn at the ground, before all that had been replanted had become glazed; that it did not mold or sustain injury in the field; but it is due to truth to say, that it required much watchfulness and care to prevent moldiness after it was husked—constant stirring and exposure—and that we were obliged to uncrib a quantity, and to spread it, to save it from being injured. We think that corn dries and ripens better in stooks, than in any other situation, even than when topped and left in the hill. In the latter case it is receiving a constant accession of sap from the roots, which, for want of leaves to elaborate it, instead of being beneficial to the grain, serves but to bring on fermentation, as was stated by our Coxsackie correspondent, in the last Cultivator. The experience of the year seems to admonish us,—1. to fit our corn grounds for early planting, by freeing them from excess of moisture, by underdraining, or by ridging, where the surface is flat, or the subsoil tenacious. 2. To plant as early as the temperature of the season will admit. And 3. To select the earliest kind of corn for our crop. We have heretofore recommended a 12 rowed yellow variety, which *we* termed Dutton corn, and so far as we have learnt, this has ripened well where it was planted in ordinary season, and was not destroyed by the grub. The growth is rather dwarfish, but it will the better bear to be planted close; the product is abundant, and the grain hard, heavy and bright. Much of our seed has been sent, during the two last years, to New Jersey, Pennsylvania and Ohio. We should be gratified to learn the result of its culture in those states as well as in New York. On the whole, we do not think the corn crop has been half of an ordinary yield.

Barley, which ranks next in importance to the preceding in the husbandry of many of our counties, has been a good, we think better than an ordinary, crop. On lands which will not carry wheat, and which are neither very light nor very stiff, this is a profitable crop. It gives nearly the same yield as oats, while it sells for nearly double in the market; and it is a question of some doubt, considering its superior nutritive properties, whether it cannot be as profitably raised for horse feed. In many of the eastern countries it is extensively cultivated exclusively for this purpose. The culture of this grain is extending in our state. Barley, for malting, should be threshed with a flail, as the machine, with the awn, often takes off the germinating part, which injures it for malting.

Rye is the bread corn of Germany and Russia, and the *natural* bread corn of many parts of the United States, for we are disposed to adopt, in this case, the opinion of St. Pierre, that every country produces what is most congenial to the wants, and conducive to the health, of its population. One great difficulty is in reconciling this axiom with the actual condition of our brethren in some parts of New England. Wheat they cannot grow,—of corn they grow but a modicum—and rye, they will insist their soil is incapable of producing. Whether this latter difficulty arises from actual sterility in the soil, from the absence in it of the peculiar pabulum of this grain, or from the difficulty of tilling the ground, we do not pretend to say; but the fact will not readily be erased from our memory, that in passing from Worcester in Massachusetts, to Enfield in Connecticut, in October, a distance, we believe, of 40 or 50 miles, we did not notice a solitary field of rye or wheat. The puzzle is, what, according to St. Pierre's theory, constitutes the *natural* food of the population? But, to leave this question unsolved, the crop of rye has been good, and the grain heavy. According to Von Thaer this grain abstracts 30 parts in one hundred of the nutriment contained in the soil where it is grown. It is less exhausting than other small grains, and is ranked next to wheat in its nutritious properties. It contains a substance, in the opinion of Thaer, which facilitates digestion, and has an action particularly refreshing and fortifying on the animal frame.

Oats have been unprecedently fine. The cold season has been propitious to this crop. A large amount was sown, and both straw and grain were heavy. In many cases the crop was not secured till late in September.

Potatoes have, like oats, been favored by a cool summer; and where not cut down by the frost, before they were ripe, the crop has been a very large one. The scarcity of cattle forage and corn, however, will cause heavy requisitions to be made upon the oats and potatoes, to make up the deficiency, and present prices of these articles are likely therefore to be sustained and increased.

Mangel Wurtzel and *Ruta Baga*. The culture of these roots as field crops, has been greatly extended, and as far as we can learn, with very encouraging success. We are yet hardly well enough versed in the management of these crops, and the labor saving machines which should be used in their culture, to enable us fully to appreciate the advantages they are capable of affording to our husbandry.

Hops have made but a very light return for the labor bestowed in their culture. The crop was light in New York, and the quality generally inferior, on account of their not having matured well before the arrival of the autumnal frosts.

The dairy has been a source of handsome profit on account of the high prices which butter and cheese have sustained in the market. This branch of husbandry is being considerably extended among us. It probably affords as sure a profit as any other department of husbandry. The gains may not be the greatest, but they are obtained at the least risk and expense.

Butcher's Meat, though rather scarce and high in the early part of the season, has been abundant and cheap towards the close of the year. The apprehension of a scarcity of fodder has led to the slaughter of a vast number of neat cattle and sheep; and induces an apprehension that both will be high the current year. *Pork* has been rather light, but the article has sustained a very liberal price.

To destroy Rats and Mice.—The following has been recommended for this purpose, and is worth the trial. Take equal quantities of powdered oatmeal and unslacked lime; mix them by stirring, without adding any liquid, and put a small quantity in a place infested by rats or mice; they will swallow this preparation, become thirsty, and the water which they will drink will slack the lime, and destroy them.

COMMUNICATIONS.

LETTERS FROM A FATHER,

Living in the State of New York,

To his Son in Western Pennsylvania.

NO. III.

To my Son—Many lands are naturally too wet for the purposes of agriculture, and such evidently are some of yours. For all the purposes of agriculture, the grass husbandry not excepted, dry farms are the best. Soils in the best condition are such as are not usually connected with any stagnant water—such as will, at times suitable for tillage, crumble and break to pieces under the operations of the plough, and not coagulate in the form of mud. In this condition, every farmer should desire to have the soil of his whole farm. So much of your farm as is not naturally in this condition, should be brought into it, and this may be done by draining.

There are different methods of draining, and in determining which to employ, regard must always be had to the peculiar circumstances of the case. The principal methods in use for conducting off water from grounds that are too wet, are by covered or under-ground drains, open drains, ploughing ground into ridges, and opening furrows with a plough, which applies chiefly to lands sown with grain, and answers only a temporary purpose. All these methods of draining are, in the cases to which they are respectively adapted, of great use and importance.

Covered or underground drains are the most expensive, at least as to their first cost, but they are, in cases that will admit of them, altogether preferable to any other. They are so, because they offer no impediment to tillage and other farming operations, and because they produce no disfiguration on the face of the soil. They are also more durable than any other, and not so likely to get out of order. These drains are used to admirable advantage, when grounds are to be drained that are rendered too wet by springs issuing out of them. Covered drains are generally made from two to three feet wide at the top, and about three feet deep. The sides are tapering, or inclining towards each other, so that the bottom of the drain is left only six or eight inches wide. If stones can be had, especially cobble stones, they are the best materials to be used in filling these drains. In beginning to put in the stones, care is generally taken to lay them so as to form an open unobstructed passage for the water; but perhaps this is not very material. If the stones are thrown in ever so carelessly, the water will percolate through them, and thus find its way off. The drains are filled in this manner up to about 10 or 12 inches from the top; then the stones are covered with straw or other rubbish, to keep the earth from falling in among them, and the work is finished by throwing on the earth, and completely covering the whole.

The expense of these drains, when stones are used, and the whole work is hired, is estimated not to exced fifty cents a rod. When stones are not to be had, and other materials are used for filling the drains, the expense frequently is not so great. It is the practice of some, where stones are not plenty, to use brush instead of them. Such materials are plenty and cheap in your country. The brush are laid in the drains horizontally and longitudinally, that is, flat down, and lengthwise in the direction of the drains. Thus the drains are nearly filled with brush, and the subsequent practice is the same, as when stones are used. It is understood that drains thus constructed, especially if stones are used, are very durable, if not of perpetual duration. Such drains are rapidly coming into use in the section of the country in which I live; and by means of them many fields, or parts of fields, which before had been useless, and some of them worse than useless, have been converted into the best of tillage grounds. All who have tried the experiment, are highly gratified with its results.

I am not so well informed as I should and might have been, in regard to the cause of superabundant water on some parts of your farm. It is not known to me whether there are springs in your windfall, or whether the water so habitually present there is only such as falls from the atmosphere, and is confined there by a retentive soil or subsoil. The latter I apprehend to be the case, but in this I may be mistaken. If the water is only such as comes directly from the atmosphere, the fault, I think, must be in the subsoil, rather than in the soil. I cannot suppose that the soil of your farm, or that generally of the country in which you live, is remarkably retentive of water. The reverse of this I must suppose is the fact. If I mistake not, the soil of your farm, as well as that of other farms in the vicinity, rather inclines to sand, while clay scarcely appears to form a perceptible part of its composition. If so, the cause of excessive humidity in some part of the soil of your farm, is to be looked for in the subsoil. This probably is a kind of stratum of earth, composed of cohesive substances, and so compact in its texture as to forbid water to penetrate through it, and thus pass off into the bowels of the earth. Of course the water descending from the atmosphere is retained on the surface of the earth, and abides there, intermingled with the soil, to its great detriment. Such probably is the true cause of excessive humidity on some parts of your farm. Evils of this kind, resulting from a retentive soil or subsoil, are not so easily remedied as when they are caused by springs. Yet they generally admit of a remedy, and in your case a remedy must be applied, or several acres of your farm will forever remain nearly worthless.

I pause here to remark, that I do not expect you, in one year, or in two, to make all the improvements suggested in this letter. To bring the soil of your farm into a perfectly good condition, will be the work of several years. Yet I view it as important to spread the subject before you, and urge your attention to it. If the excess of water on some parts of your farm is caused, as I suppose it is, by a retentive subsoil, I am not aware that you can at present, if you ever can, do much to remedy the evil, by covered or underground drains. I consider that your chestnut stumps, which are durable, may for years impede your operations of draining. They too will render it difficult to bring the surface of your windfall to a smooth and handsome form. Open drains need no explanation. I can scarcely doubt that some of them may be employed immediately on your farm to advantage.

There is another method of draining, easily practiced, and which I consider as happily adapted to the circumstances and condition of no inconsiderable part of your farm. That is, when you prepare ground for grain crops, let the final ploughing throw it into ridges. This is done by turning to the right instead of to the left, at the ends of your lands, or in the language of teamers, by geeing about instead of hawing about. In commencing a ridge, two furrows are turned towards each other, at the place where the center of the ridge is intended to be formed, and afterwards as many more furrows are turned in the same directions as will be necessary to finish the intended ridge. If the soil is badly encumbered with water, these ridges should not be more than 12 or 15 feet in width; but in many cases, they may be much wider, and still answer a good purpose. This method of draining chiefly applies to lands intended to be sown with winter grain. After the ridges are formed, the seed is put on and covered with a harrow drawn only in the direction of the ridges. Thus you see the land will be left in ridges, and between all the ridges will be deep furrows, which will serve as drains to carry off the water. Care however must always be taken to give to these ridges such directions as will accord with the natural descent of the field. For instance, if the land descend to the east, the direction of the ridges must be east and west, in order that the water passing off in the furrows may have the advantage of natural descent.

This method of draining may be practiced to great advantage on your farm, and other farms in that vicinity. If your next neighbor, whose wheat last year entirely failed by winter killing, had prepared his ground in this way, he probably would have saved his crop. When the ground thus prepared comes to be tilled again, the process will be to reverse the furrows, and then the center of the ridges will occupy the places where the deep gutters are now.

There is still another very simple process of draining, which, like the one last mentioned, applies chiefly to fields sown with grain. It is only, after all the processes of tillage are finished, to open furrows with a plough, and give them such directions that they may have the advantage of natural descent in carrying off the water. This may be practiced to great advantage on your farm, and it should be practiced *every where* to a much greater extent than it is. Here closes what I have to say on the subject of draining. I do not profess to be skilled in this art, yet I hope I have not written upon it altogether in vain.

A Father.

New York State, December, 1835.

To clear barn and out-houses from mites and weevils.—The following method is practiced in Germany for granaries infested by mites and weevils. Let the walls and rafters above and below of such granaries be covered completely with quick lime, slackened in water, in which trefoil, wormwood and hyssop have been boiled. This composition should be applied as hot as possible.

Premium on Cocoons.—The Legislature of Vermont at its late session, passed a law giving a premium or bounty of ten cents on each pound of cocoons hereafter raised or grown within the state.—*Silk Culturist.*

From the Silk Culturist.

Profit of a Hemp Crop.

We are indebted to the politeness of Samuel Chew, Esq. of Lexington, Kentucky, for an estimate on the cost and profit of a crop of Hemp, coupled with a request that we will compare it with a silk crop in New England. We cheerfully comply with the request, prefacing, however, the remark, that from the rich bottoms of Kentucky, a much larger crop of silk may be expected, than from the ordinary land of New England. With respect to the labor necessary for a hemp crop, Mr. Chew says:—"I wish very much for a fair comparison between the silk and our staple, which is hemp. I will give you the cost of an acre of hemp. As it takes the best land, the rent is worth.....$4 00
The land must be ploughed at least twice, the best farmers plough three times and harrow twice, which will take a team two days, at $1 a day, is.....2 00
It takes one and a half bushels of seed, at $1 a bushel,.....1 50
Cutting the hemp will take two days, at $1 a day,.....2 00
Tying it in bundles and stacking, one and a half days,.....1 50
Spreading it down to rot, one day,.....1 00
Breaking is always done by the short hundred, as we call it, of 100 lbs.,.....5 60

$17 60

Five hundred pounds, of 112 lbs. to the hundred, which we sell by, is a good average crop to the acre, and $5 a hundred may be called the average price for the last ten years, with the exception of the last, will give $25 as the product of an acre well cultivated,.....25 00

Nett profit,.....$7 40

Seventy-five pounds being a man's task to break in a day, will leave us the above sum of $25, for fourteen days work; or $740, if we could hire the work done, which is nearly impossible, as it is very dirty, and so laborious that scarcely any white man will work at it—of course it is entirely done by slave labor. A stout man will make nine or ten acres, when well managed, and as it does not interfere with a corn, or scarcely any other crop, may make something besides. Thus you see a stout man will make from two hundred and fifty to three hundred dollars. Negro women cannot labor at hemp at all, and are scarcely worth any thing. Although our crop does not appear so visionary as your silk crop does per acre, from your least calculations of from one hundred and forty to five hundred dollars, yet as a whole, will it be as good as hemp to slave holders. If near it, I assure you, I for one will quit hemp. I wish a fair comparison, and if it cannot be obtained through the medium of your paper, how am I to obtain it?"

We have long been of the opinion that the culture of silk is peculiarly adapted to slave labor, especially females, infirm male adults, and children of both sexes. Little muscular strength is required, and no more judgment and skill than ordinary negroes may exercise under the care and direction of a judicious overseer. With respect to the comparative profit, we would refer Mr. Chew to the communication of the Messrs. Cheney in the last number of the Culturist. According to their estimate, 14,000 Chinese plants of two years' growth to the acre, would furnish 35,000 lbs. of foliage, which would be sufficint to make at least 350 lbs. of silk, worth, after deducting the expense of reeling, $1050. The labor necessary to attend a family of worms sufficient to make that quantity of silk, could not exceed 230 days, which being estimated at a dollar a day, and deducted from the gross amount, would leave a nett profit of $820. The experiment of those gentlemen has not been completely tried, yet we have little doubt of the capacity of the lands and climate of Kentucky to produce it.

We see no difficulty in the way of a successful prosecution of the culture of silk in connexion with the culture of hemp, on the Kentucky plantations. The silk crop is not commenced until some time after the time of sowing hemp is passed, and it is finished before the hemp crop is ready for harvest. Help also which would be worthless on the hemp crop, may be profitably employed on the silk crop, and the nett income of the plantation is thereby astonishingly increased.

From the Silk Culturist.

Price of Making Cocoons.—In most of our estimates of the profit of a mulberry plantation, we have put down the labor of making silk at three-fourths of its value, and in no instance less than one half. A few days since, a silk grower from Mansfield informed us that he was ready to contract for making cocoons at $1 a bushel, which is one third of the price they are now selling at the Silk Factory in this city. He remarked that he could furnish the help and make a fair profit at that price. From this statement it will be seen that foliage sufficient to make a bushel of cocoons is worth on the tree $2,00, and according to the quantity ordinarily consumed in making a bushel, 1½ cents a pound. Taking this as the basis of a calculation, a farmer may readily ascertain the income he may derive from this source without interfering with his other agricultural operations. The sale of mulberry foliage is a very important article of traffic in Europe and Asia, and we have no doubt will soon be in America. Every farmer who sets out mulberry trees will very soon derive a fair profit from them, though he may not be disposed to engage in the culture of silk. We hope no farmer will neglect to provide in this manner, a fund from which both himself and his posterity may draw at pleasure.

Sorting Cocoons.—Before commencing the operation of reeling, the reeler should sort the cocoons and place them in separate parcels, according to their quality. The qualities of cocoons admit of five varieties, and are known by the names of double cocoons—the *chiques* or skins—the fine—the demi-fine, and the satin cocoons. The double cocoons are those in which two or three worms have worked and enclosed themselves. They are larger than the single ones. The *chiques* or skin cocoons are softer and resist much less to pressure—the fine cocoons are those of which the surface presents a very fine and very close grain—the demi-fine are of a more loose and larger grain—the satin cocoons are those of a still inferior quality. Though cocoons are not ordinarily so particularly sorted; yet when it is intended to reel silk of an extra nice fiber, it is desirable they should be.

Before reeling they should also be cleaned from the floss and loose threads with which they are enveloped. This is done by having them picked off by children.

In picking or flossing cocoons, care should be taken that all the floss be preserved, as it may be appropriated to many valuable purposes. Boiled in soap and water, and afterwards carded with common cotton cards, and spun on a common spinning wheel, it maks a good material for stockings, gloves, &c.

New Work on Silk.—The Editor of this paper has prepared a *Practical Treatise* on the Culture of Silk, adapted to the soil and climate of the United States. The work is illustrated by engravings, and contains over 100 pages. Price 50 cents.

Silk Culture in New Jersey.—A number of gentlemdn of Warren county, New Jersey, have given notice of their intention to apply to the Legislature of that state, for a charter of a Company, with a capital of $300,000, for the purpose of raising the mulberry and manufacturing silk, in that county. This is a very encouraging beginning, and as the soil of New Jersey is peculiarly favorable for the growth of the tree and rearing of the worm, there is little doubt of their being followed by other gentlemen equally spirited.

Atlantic Silk Company.—A number of the citizens of Nantucket have recently associated for the purpose of engaging in the manufacture of silk, with ulterior reference to the production of the raw material. They have assumed the name of the "Atlantic Silk Company," and propose investing a capital of not exceeding $40,000. From an article on the subject in the Inquirer, it is manifest they have taken hold of the business with an energy aud zeal which will ensure success. They have purchased a site for a factory, and are about erecting a building 60 by 30 feet. They have also contracted for an engine, machinery, &c., and expect to turn out in the course of the ensuing year upwards of three hundred yards of rich heavy fabrics per week.

Beaver Silk Company.—The silk business is "going ahead" in Pennsylvania. A company has lately been formed in Philadelphia by the name of "The Beaver Silk Culture and Manufacturing Company." The capital stock of the Company is $50,000, and a tract of land near Beaver Falls in Western Pennsylvania, has been purchased for their operations. Samuel C. Atkinson, Esq., editor of the Saturday Evening Post, has been elected President of the Company.

In the November number of the New York Farmer we find a long and interesting letter from our friend, A. Walsh, Esq. of Lansingburgh, written during a three days' visit to Philadelphia in August last, from which we select the following:

After breakfast, taking all the rest of the day before me, I set out to view the gardens, waterworks, &c.; and, taking a hackney coach, my first course was steered to Bartram's Garden and Nursery. These are situated on the west bank of the Schuylkill, about three miles from the city, and are now owned, and judiciously managed, by Mr. Robert Carr, the son-in-law of Mr. Bartram, who is well known as a botanist and naturalist; and his very superior collection of North American trees and plants, show him in the very pleasing light of being truly national.

On a stone over one entrance to the house, I noticed the date of 1731, rather roughly but plainly cut. On inquiring, I found that this front of the mansion was built at that period; and another inscription, purporting to have been cut 39 years afterwards, reads and spells thus;

"It is god alone almyty lord
The holy one by me adored.
"John Bartram, 1770."

The garden, it is said, was commenced about four years before the date of the first inscription, and is now about 114 years old. I was informed that Mr. Bartram and his son must have been about 100 years in collecting this valuable legacy they have left to the Flora of North America. A small strip of land, containing less than seven acres, was said to contain rising 2,000 species, natives of our own country. But I found also a no less rich treat in examining the exotics, which were very numerous and valuable. The collection of Camillas and tropical plants, surpassed any thing of the kind I had ever seen; among the latter were some fine specimens of Zamias, Ficus, Euphorbia heterophylla, &c. The grounds were tastefully laid out, and besides the amazing variety of smaller trees and shrubs, arranged, apparently, to the best possible advantage, the effect is still heightened by the grandeur of several trees, majestically towering above, and overspreading the rest; among which are a Norway Spruce, at least 80 feet high; a Cypress, (*Cupressus disticha,*) 25 feet 6 inches in circumference, and 114 feet high; native Magnolias, Flowering Acacias, &c. And beneath this lofty display of variegated foliage, on proper fixtures, I noticed a magnificent Sago Palm, the circumference of its foliage 24 feet, and the stem 3½ feet. But it is in vain to attempt enumeration, when the bare catalogue would four times exceed my limits.

Between this beautiful and magnificent grove and the Schuylkill are several fish ponds, with gold and silver fish and aquatic plants; and still farther on, towards the river, is an ancient cider mill, cut, with great labor, out of the solid rock,

near which was a small plot of Gama grass. From the numerous accounts of the productiveness of this grass at the south, and particularly in North and South Carolina, it must be found a good substitute for clover, herds grass, &c. &c., and its introduction of great importance to that section of our republic. But from an examination with some of it, raised in my garden, and also the opinion of Mr. Carr, who has had it on his grounds a dozen years, I am led to conclude it will be of no great value to our northern farmers. The vines and fruit nurseries were extensive, and appeared in perfect keeping with the rest of this splendid establishment.

Nor was this display of nature more pleasing than the polite attention of its worthy proprietor, who not only answered, with apparent pleasure, all my questions, which, to say the least, extended to the utmost bounds of civility, but showed me many deeply interesting curiosities, and, among other things, his extensive and valuable library, principally on Agriculture, Horticulture, and Botany, which seemed to say,

"Come, let me make a sunny realm around thee,
Of thought and beauty! Here are books and flowers."

Leaving this place with reluctance, I steered my course to Lemon Hill, which is the name very appropriately given to the pleasure grounds of Mr. Henry Pratt. It is situated in the immediate vicinity of the grand Water-works, and is said to contain over twenty acres. Nature seems to have displayed her utmost power in modeling this charming situation, leaving but little for art to accomplish, to render it one of the most delightful spots on earth; and art, with such a bold and lovely model, appears to have availed herself of every advantage, to beautify and complete what Nature had so happily begun.

The mansion is placed on an eminence, commanding a delightful view of the Schuylkill, just at that point where every thing is in pleasant motion. The busy neighborhood of Fairmount, the interesting views of this fine landscape are fully kept before the eye, by gently winding paths, through a rich and well kept grass plot; every turn producing some new and pleasing effect. The foot does not tread in the same path which the eye has gone over before. The groups of lofty trees, so advantageously placed on the hill, near the house, with their deep green foliage, form a beautiful contrast with those of more light and stinted growth, situated in front of the ground bordering on the water; thereby adding much to the effect, by seeming to remove the perspective to the farthest extremity of the picture. The numerous well stocked fishponds, with their islands and aquatic productions, summer-houses, gardens, porters' and laborers' lodges, all well placed for picturesque effect; and the beautiful little grotto, thrown so chastely over the mineral spring, all conspire to complete the beauty and variety, without, in the least, marring the productions of nature, so very interesting in the immediate vicinity. The spacious green hot houses, with their numerous and lovely tenants, spread far and wide in every direction, making the whole garden a repository of flowers and fragrance, certainly stand prominent in their kind; and as we migrate along the well kept gravel walks, so richly adorned by tree, shrub, and plant, of every shade and shape, and from every climate, intermixed with the inmates of the green house, the shaddock, orange, citron, lime, the fig tree, laden with inviting fruit; the sugar cane, pepper tree, banana, guava, and plantain; the cheremalia, mango, and splendid cactus; a reflecting mind must be lost in admiration, not knowing which most to admire, the amazing variety produced by nature, or the wealth, liberality, and taste, which have planted and sustained them there.

As I cast a valedictory glance at this enchanting scenery, the power of association brought forcibly to my mind the slighted and neglected talents of my worthy friend Perrine, whose whole soul is compounded of botanical science and horticultural taste. Had the magnanimity of our wise National Legislature been sufficient to have granted his petition, for a few acres of wild, and, probably, for a long time to come, worthless land, on the Peninsula of Florida, and the little pecuniary aid, to which every sensible man in the nation would have been proud of contributing, to enable him to establish a national repository, for the introduction and acclimation of exotic plants, he would ere now have exhibited all the beauties and rich treasures of the vegetable world, flourishing in high exuberance, without the expensive aid of artificial heat. One half of the amount, which the patriotic and noble spirited proprietor of this establishment has expended, from his own purse, would have accomplished his object in a manner highly creditable to the nation, and profitable to the present and future generations. But public bodies, like corporate bodies, have no souls.

On Sunday morning I attended Church. But in the afternoon, as an exercise not altogether unappropriate for the day, I visited Rolinsan Rural Cemetry. This is a place which, though no person of common sense could leisurely enter with feelings of levity, yet no reflecting mind could spend a few moments' contemplation in it, without experiencing emotions of exquisite pleasing satisfaction, though still partaking of a sober seriousness nearly bordering on melancholy.

This place contains 2¼ acres. It was commenced in 1827, and now contains between 4 and 5,000 interments, and about 100 vaults. When it was first commenced, a lot about 10 by 8 feet sold for $40, but will now command from $90 to $100. An adult stranger can be buried for $8, and a child for $4, including opening and closing the grave.

The place is inclosed on three sides with a handsome stone wall, and the front side with an iron railing. On the right hand of the entrance is a dwelling for the attendants to the concern, where they are at all times to be found. On the left is a green house, with rooms over it for meetings of the lot holders and managers.

The plants in the green house are for the purpose of ornamenting graves at proper seasons; and hardy flowers in great variety are growing, tastefully and liberally scattered over the ground.

Among the various and numerous monuments, some were of peculiar elegance. I noticed one, on which the inscription stated that it was executed in Italy. It was of exquisite material and workmanship, and I could not help admiring the skill in the fine arts peculiar to that country; but looking a little further, I was most agreeably astonished to find one executed in Philadelphia quite surpassing it; I could not but indulge some feelings of pride in reflecting on the amazing improvement since 30 years ago, when similar monuments were ornamented with an awful staring death's head and marrow bones.

Among the interments I noticed that of a Chinese, aged 37, buried in 1830. Part of the inscription was in the Chinese character.

I could not view this interesting spot without painful reflections, on what appears to me the unpardonable want of similar institutions in the great and opulent state in which I live. Can it be from a want of social affection in the people in this state, or can it be from a feeling of parsimony, that we grudge the expense, that we suffer our friends to be put under the turf to-day, and the place of their rest broken up and perhaps appropriated to some other use to-morrow? The Corporation of your city are selected for their supposed fitness, and are duly authorized and empowered to manage and direct all the affairs of public interest; and is it not a duty they owe to protect the public feelings, from what must be daily suffered by persons who cherish with tender affection the memory of their deceased friends, when they see the place of their remains turned into a common highway, or perhaps dug up and their bones scattered and trodden into dust?

This is naturally a public concern; but if it does not soon receive the attention the importance of the case demands, it will pass into the hands of private speculation, from which it would be difficult to return it to its proper channel, and which would place it in a state truly to be deplored by every person whose heart is warmed by a spark of philanthropy or patriotism.

From the Cultivator.

THE ATMOSPHERE.

A knowledge of the constituents of the atmosphere, and of the various and important offices which it performs in animal and vegetable economy, is valuable to the farmer, not only as serving to aid him in all his rural, money making operations, but as offering a source of high intellectual enjoyment. Although the subject may be deemed too abstruse for our humble columns, we consider it fraught with so much useful instruction, that we doubt not it will be read with interest by hundreds of our young patrons; and we would fain hope that it may lead some of them into a course of study, in physical science, which will not only benefit them individually, but ultimately become beneficial to man. The Creator has endowed us with power to become acquainted with many of the wonderful phenomena of nature, and of rendering them subservient to our wants; and, in this country, the humblest individual is furnished with leisure and ample means to pursue the inquiry. The time and means that are usually devoted, in early life, to frivolous, and often deleterious pleasures, would suffice to lay in a stock of useful knowledge, which would become a blessing and a treasure in after life. But it should never be forgotton, that in all our undertakings, application and perseverance are the only sure means of success. With these views and hopes, we shall briefly describe the principal constituent parts of the atmosphere, and some of its more important offices, that seem most likely to interest the agriculturist.

The atmosphere is composed principally of two invisible gases, termed *oxygen* (sometimes vital air) and *azote*, or *nitrogen*, in the proportion of about four-fifths of the latter and one-fifth of the former. This proportion is found to exist, with trifling modifications, in all latitudes and at all elevations. Although these elements are invisible in the atmosphere, they both assume liquid and solid forms under many and various circumstances.

Nitrogen abounds in animals, but seldom to a great extent in plants. It is however found in wheat, in what is termed the gluten, and it is this which gives to that grain its prominent value. It abounds in the urine, but seldom in the dung of animals. "It is the base of ammonia and nitric acid (aqua fortis) and appears to be the substance which nature employs in converting vegetable into animal substances."—*Fourcroy*. Its principal office seems to be, to neutralize, in some measure, the properties of oxygen, and to render it fit for respiration and combustion.

Oxygen enters more or less into all animal and vegetable matters: it constitutes 88 parts in 100 of water—forms from 40 to 70 per cent. of all vegetable acids—more than 40 per cent. of the wood of the oak and beech—about 50 per cent. in starch, the principal nutritious property afforded by grain, pulse and roots—and 64 per cent. in sugar. It is essential to animal and vegetable life; it is necessary to fermentation, to combustion, to the germination of seeds, and the development and maturity of plants; and, combining with the carbon of the blood, it produces the greatest proportion of animal heat. It also combines with metals, and forms oxydes, or, in common language, *rust*.

Nitrogen and oxygen are called simple bodies, because they are incapable of division or decomposition.

Carbonic acid gas, also, is found to constitute about one thousandth part of the atmosphere, and in winter it has been found to amount to one five hundredth part. This is a compound substance, composed of two parts of oxygen and one of carbon, the latter being found pure in the diamond, and forming the substance of mineral and wood coals. This gas is produced in abundance by fermentation, respiration and combustion, is absorbed and decomposed by the leaves of plants, which retain the carbon and give off the oxygen, and constitutes a large portion of the woody matter of plants. The causes which produce it, sometimes, in confined situations, give it in such excess as to render it prejudicial to ani-

mals; but the free access of atmospheric air soon restores the equilibrium. It constitutes the proper food of plants. Thus animals and vegetables are mutually benefited, through the wise providence of the Creator, by their proximity to each other—plants giving off oxygen, necessary to animals—and animals giving off carbonic acid gas, the pabulum of vegetable life.

Water also exists in the atmosphere in the form of an elastic fluid. This fluid is found to form, at the temperature of 50° Fahrenheit, about one-fiftieth of the volume of the atmosphere, in the dryest time in summer, and is increased with the increase of temperature—heat accelerating evaporation from the earth's surface. When the temperature of the air is diminished, the aqueous fluid is condensed, and appears in the atmosphere in the form of vapor, or clouds, and is copiously deposited, in summer, in the form of dew. This water is retained principally in the lower regions of the atmosphere. It is so slightly united with the other elements of the atmosphere, that a change of temperature produces a change in its proportions; while nitrogen, oxygen and carbonic acid preserve, always, nearly the same relative proportions.

"Independently of those bodies which essentially constitute the atmosphere," says Chaptal, "there are mingled in it the exhalations constantly arising from the earth; these are again disengaged from the air, and precipitated, as soon as the heat, or any other cause which occasioned their ascension, ceases to act upon them. These exhalations modify the properties of the air, [by the carbonic acid, &c. disingaged from animal and vegetable matters in a state of putrefaction] and affect its purity. The oxygen and the water of the atmosphere become impregnated with the particles of the exhalations which are deposited with them upon the surfaces of other bodies, where they remain in contact, or enter into combination with them. The origin and dissemination of many maladies may be traced to this source; the germ of them is carried through the air by the aqueous fluid. And for the same reason it is, that intermittent fevers are endemic in those situations, where large quantities of animal and vegetable matter are undergoing decomposition, as upon the borders of ponds and marshes; and that the miasm, which arises from numerous animal remains in a state of decomposition, becomes a fruitful source of disease. It is for the same reason also dangerous, under some circumstances, to breathe the evening air; the aqueous fluid contained in it is loaded with the noxious principles which the heat of the sun, during the day, had caused to ascend into the atmosphere. The disagreeable odor, conveyed to us in mists, is owing to the power of the aqueous fluid in transmitting the exhalations arising from the earth. The manner in which the air conveys to us the perfume of plants, and the odor which it contracts from the exhalations of bodies in a state of decomposition, indicate clearly its influence in producing maladies, and still more plainly its power of propagating those that are outrageous."

We shall not, at present, speak of the other matters which commingle in the atmosphere, as light, heat and electricity—but proceed to the improvement, and the application to rural affairs, of the facts already established.

WE MAY PROFIT BY THESE TRUTHS,

1. *In selecting sites for our dwellings*—taking care to have them remote from marshes, ponds, and stagnant waters, which vitiate, by the exhalations they give, the atmosphere we breathe, and generate disease. The air in a small close room soon becomes vitiated by respiration and combustion, particularly if crowded or heated by a close stove.

2. *In the structure of our dwellings*—in constructing ample apartments, open to ventilation, and in avoiding such as are low, moist, or inaccessible to the direct and healthful influence of the atmospheric air.

3. *In improving our domestic habits*—in promoting cleanliness, an ancient, if not a modern virtue;—in avoiding the deleterious influence of the night air, especially in autumn;—in well ventilating our apartments when the weather is favorable, particularly early in summer mornings, when the air is pure and salubrious;—in graduating the temperature of our rooms, which should not be suffered to rise above 64° of Fahrenheit;—in avoiding hot sleeping apartments, in which the temperature often varies from 40 to 50 degrees, between the hour of going to bed and the hour of rising, a transition too trying for the most robust constitution,—in abandoning the use of foot-stoves, which transform our wives and daughters into delicate green-house plants, poison the air they respire, and beguile them into indolent and inactive habits, as detrimental to their health as it is to their usefulness;—and in inducing our females to go warmly and tidily clad, even to the ball room and *soiree*. How many human constitutions are ruined, in our cities, by indulgence in habits which these truths teach us to reform.

4. *In multiplying shade trees about our dwellings*, which serve to purify the air, abate the fervor of summer heats, by carrying off a portion of the caloric with the moisture they exhale, and which are withal an embellishment and an evidence of good taste.

5. *In the construction of our stables and cattle sheds*—Farmstock, except perhaps the hog, are as sensitive to good air and cleanliness as man; and the same precautions which go to secure the health of the latter, are essentially requisite to promote the well being of the former. Hence the importance of having clean and well ventilated stables and sheds, of removing the dung so that it does not undergo fermentation in their yards, and of giving them wholesome exercise.

6. *In the planting of our seeds*.—The atmosphere being essential to germination, all seeds should be deposited in the soil within its reach—they should be put just so low as will barely secure about them moisture enough to assist their germination. We have reason to think, that small seeds are often deposited too low; and that even if they germinate, the food which the cotylidons afford, and which is their only support till the seminal leaves are developed, is not sufficient to carry the plant to the earth's surface, where the leaves can alone exercise their office.

7. *In the management of our field and garden crops*.—The earths have a strong affinity for water, when pulverent and loose, but comparatively little when compact or crusted. In the former case they act like the sponge, transmitting the dews which fall upon them, and the food of plants with which they are impregnated, to the roots of vegetables. But where the earth is compact, or become encrusted by alternate rains and sunshine, the dews do not penetrate, but are dissipated by the first rays of the morning sun Hence the best preventive against the evils of drouth, is the frequent stirring of the surface, and keeping it constantly permeable to atmospheric air, and the vegetable nutrition with which it abounds. We remember a remarkable illustration of the utility of frequently stirring the surface of cultivated lands, detailed by Curwen, a distinguished British agriculturist. He prepared a field of stiff forbidding land, and planted it with cabbages. His neighbors all declared he would get no crop; but he put a horse and cultivator into it, and subjected it to almost constant stirring during the growing season. The result was, he gathered an immense crop, some of the cabbages weighing over 50 lbs. each. The farmer may derive great benefit from this practice in the culture of drilled and hoed crops, provided he does not go so deep as to cut the roots of his plants, or throw his manure to the surface. And,

Lastly, we may profit from the facts we have detailed, *in the management of our manure*, the basis of fertility to our soils. The whole of the matter of dead plants and of animals, is susceptible of being transmuted into the matter of living plants, by the ordinary processes of nature; and it is capable, however solid it may seem, of being reduced to liquid or gaseous forms. Indeed, it proceeds to take these forms immediately, on its losing its vitality, as soon as it comes in contact with air, heat and water, the great agents of decomposition. The moment manures begin to ferment, the waste of vegetable food begins; carbonic acid gas is disengaged, and is scattered by the winds; the oxygen of the atmosphere, uniting with the hydrogen of the mass, forms water, which settles into the ground, or is carried off by rains; and the mass is reduced in volume, and when fermentation has exhausted its force, it has lost one half of its fertilizing properties. If the fermentation takes place in the dung yard, upon the field, this half is lost to all useful purposes for the farm. If it takes place in the soil, the earth imbibes it, and the plants growing thereon are fed and nourished by it—the gases and liquids are converted into the solid matter of the growing crop.

We have thus endeavored briefly, though we fear but imperfectly, to illustrate some few of the benefits which may result to the farmer from an acquaintance with physical science.

List of Payments

For the Farmer from Jan. 9, to Jan. 15, 1836.

For vol. 6.

A. J. Bates.
Calvin Fletcher.
Thomas Ratoon.
Asa Rowe.
L. Hart.
Joseph Sackett.
Job Otis.
John H. Andrews.
John Jackson.
James Moore.
Smith Bryan.
John Mason.
Thomas Hillhouse.
Philip N. Bonesteel.
Job Doud.
Nathan Follett.
S. Gorton.
Benjamin Bowen.
Curtis Cole.

Last ½ of vol. 5.

A. Poole.
S. B. Murdock.
Joseph B. Hoyt.

1st ½ of vol. 6.

Martin Roberts.
Alexander Patten.
Dennis Sunderlin.
Josiah Brown.
E. Willetts.
Cornelius Tarbush.
Ira Fisher.

For vol. 5.

Alonzo Fisk.
Asa Averhill, vols. 4, 5, & 6.
Alexander Walsh, vol. 6 & ½ of 7.
Wright Lattin, ½ of 6, & ½ of 7.
J. Spicer, vol. 7.
Abraham G. Hunt, ½ of 5, & ½ of 6.
R. Button, ½ of 5, & ½ of 6.
E. W. Bull, last of v. 6.
Edward P. Livingston, vol. 5, & ½ of 6.
G. V. Denniston, vols. 6 & 7.
Henry H. Coit, vols. 4, 5, 6 & 7.
Silas Covell, ½ of 5 & ½ of 6.

☞ In the list of payments, in No. 1, the name of *George Spencer*, who has paid for vols. 6 & 7, was accidentally omitted.

Fresh White Mulberry Seed.

100 POUNDS of *Genuine White Mulberry Seed*, raised in Connecticut, and warranted the growth of 1835. For sale at the sign of the "GOOD SAMARITAN."

Hartford, Conn., Jan. 5, 1836. jan 16–f4t*

1000,000 Silk Worm Eggs,

FOR SALE.

THE subscriber having promised to supply so many individuals who called to see his worms at work last year, and he having already sold so many, deems it proper to advise those who have not yet received any, and are intending to have some, that they must order them at once, or possibly they will be disappointed, the demand being so great, and this being the proper season to forward them. They are sold for 25 cents a thousand. Orders enclosing the amount will be punctually attended to.

JAMES HOUGHTON.

Rochester, Jan. 7, 1836. j7rf3m

Robbins' Planting Machine.

WITH this Machine Corn, Beans, Peas, Broom Corn, Mangel Wurtzel, Turneps, Onions, and seeds of almost every description, can be planted with more system and correctness than can be done in the usual manner of planting with the hand and hoe. One man may easily plant five acres a day, placing the seeds any given distance apart, from two or more inches, and in rows two and a half feet apart.

Machines can be had by applying to REYNOLDS & BATEHAM, Rochester; C. N. BEMENT, Treasurer of the State Agricultural Society, Albany; BUSHROD BUCK, Lanesborough, Berkshire county, Mass.; and DANIEL T. BUCK, Lowville, Lewis county, agent and proprietor for making and vending said machines, at all of which places it is intended to keep a supply on hand.

Lowville, Nov. 24, 1835. nov 28–6m

[COMMUNICATION.]

"*The tongue can no man tame.*"

If this had not been the language of inspiration, experience has proved it to be the language of truth. The tongue is the most untamable thing in nature. Every kind of beasts and birds and of serpents, is tamed and has been tamed by mankind; but not so with the tongue. Who among the sons of men ever yet tamed his own tongue? Not one. A person can *bridle* his own tongue or *hold* it, but no sooner does he take off the bridle or let go his hold than this little member runs wild, and out slips something from it in the moment of passion or of levity which the speaker presently wishes back. Mark Anthony, it has been said, tamed lions, and drove them, harnessed to his chariot, through the streets of Rome. Had he tamed his own tongue it had been a greater wonder still. The rattle snake has been tamed, and so has the crockodile; but the tongue never. Pythagoras imposed on his pupils constant silence for months and years together; but did it all signify? No sooner were they permitted to talk than they gabbled a deal of impertinence. Besides, to withhold the tongue from speaking at all, is destroying its end and use, rather than taming it. The gift of speech is too precious to be thrown away. Let the tongue be accustomed to speak, and to speak as it ought. "A word spoken in season how good it is!" Unruly tongues on the contrary, produce "a world of iniquity." Some are full of deadly poison. Such are they that curse men and blaspheme God, and which utter lies for mischief or for sport. Such too is the deceitful tongue, whose words are smoother than oil, yet are they drawn swords. There is the sly, whispering tongue, and the babbling tattling tongue; each of which separateth very friends. The words of a tale-bearer are as wounds. He wounds others thereby and himself too. For the mouth of such a fool is his destruction. An impertinent meddling tongue makes bad worse, even when employed in offices of friendship. When Job was smitten from head to foot, the busy tongues of his wife and his friends were a sorer plague to him than all his biles; and thus it often happens that a person under misfortune, suffers as well from the busy meddling tongues of friends as from the malicious tongues of enemies. The tongue is a fire. Such is the tongue of the passionate man or woman, whose mouth, foaming with rage, casteth abroad words which are as "fire brands and death." Such also is the tongue of the slanderer and backbiter, which being itself "set on fire of hell" puts whole neighborhoods and communities in a flame, and setteth on fire the course of nature. How many a pretty mouth (ah sweetly fashioned mouth,) has been disfigured and made hideous by the fiery tongue in it. What then is to be done with this unruly little member, which "boasteth great things," and occasioneth infinite mischief in the world? Since no man or *woman* ever can quite tame it, what is the best way to manage it?—First, correct the heart, and keep *that* with all diligence. The foolishness of the lips is first uttered in the heart, for "out of the abundance of the heart the mouth speaketh." Next, carefully bridle the tongue—keep the *bit* upon it at all times, especially in the moment of sudden anger and in the hour of joy and conviviality. Self-command as respects the tongue, is as necessary as it is difficult, for we are told from divine authority, "if a man offend not in word, *the* same is a perfect man, and able also to bridle the whole body."

From the North American Review.

Study of Natural History.

Though the improvement of our condition is not the most important thing, still it is important, and natural science enables us to secure and advance it. We call ourselves lords of the creation; but we little know the resources of our dominions; every year is bringing to light some new treasures; and, moreover, while we boast of this aristocracy on earth, there are creatures which threaten to abolish our peerage, unless unless natural science discovers the means to put them down. The larger animals are subdued to our purposes, and driven out from our bounds; our vegetable enemies, such as the leuco-chrysantheum, and the Canada thistle, can be destroyed by reasonable care; but meantime, insects, creatures which man can engage single handed, threaten to overwhelm him with their numbers. Some explore our mansions to prey upon our food, dividing their labor on the most approved principle to make the destruction sure. Others pay their attention to our wardrobes, and work upon our clothes in silence and darkness; death-watches drum upon our head-boards to enjoy our fright; rosebugs, sawflies and caterpillars of all descriptions lay our gardens and flower beds waste; caakerworms leave our fruit trees barren of every leaf, curculios gather the fruit, and the borer comes to put the finishing stroke to the tree. They seem to ascertain what man values most, and then they know where to commence their depredrtions. Our only consolation is, that others suffer even more than we; in South America there are tribes which are obliged to bury themselves in the ground, as if for their long sleep, before venomous insects will suffer them to close their eyes. All kinds of historical documents are destroyed by the white ants; for which the future historian of that continent will doubtless remember them in his benedictions. In India, matters are still worse; the ants have been known to board a ship of the line and sink it in the Ganges; the palace of the Governor General at Calcutta is now under their hands, and all the conservatives in the British empire will not save it from the dust.

And now what is to be done? It is true, we have suggested, that if they eat us and ours, we can take revenge by eating them; and this would seem to be a fair and natural retribution, by which we may punish their transgressions and reduce their number. But there is an unhappy prejudice against this course, with which we confess that we sympathize, though against our judgment and conviction. Our only hope, then, is in the progress of natural science, which in this and other departments must step forward to remove existing evils. It must beard these minute lions in their den. Moreover, it must teach the human race, that if they will not eat them, it is foolish in the extreme to quarrel with creatures that will. They are active against their own interest when they allow idle boys to shoot birds, under pretence of protecting fruit, which those same boys are a thousand times more likely to steal and devour. A great point will be gained, when the farmer is able and willing to distinguish his friends from his foes.

Natural Philosophy has furnished its light-houses and life-boats for the ocean, its lightning rods and steam engines for the land, and its safety-lamp for those who explore the regions below. Chemistry has supplied its bleaching inventions and its medicines, not to speak of the more questionable blessings of dry bone soup, linen rag sugar, and sawdust bread. Natural History, though it seems to content itself with simple descriptions of nature, forbearing to investigate its laws or the action of its powers upon each other, will continually unfold new productions and properties in all its departments;—new uses for animals, vegetables and minerals, and ways in which they can be applied to the benefit of man. It will teach men to employ nature against itself, and so to neutralize many of its evils, showing how it furnishes the antidote as well as the bane; showing, in fact, that it never puts difficulties in the way of man, without some corresponding advantage which it rests with them to discover. Of course it will exact something in return; it will require men to look around them with observing eyes, and to pay at least sufficient attention to nature, to know how to estimate the blesaings which it bestows But, for all this, it will abundantly reward him; it will make him happy, by affording something to fill up the vacancy of his mind and heart. If the mind ever rests, its calm is not clear, transparent repose, but corrupt and unhealthy stagnation, and this is a danger to which men are exposed much oftener than they know. We are unconscious of our inaction of mind, because revery is mistaken for thought; a man never looks so profoundly intellectual as when he is thinking of nothing. A solitary walk,—a seat by an evening fire, are said to be favorable to thought, when sometimes, on such occasions, not a thought passes through the mind for hours; thought being the action, and not the dreamy repose of the mind. Now when this science changes the thoughtless into observers; when it teaches them to look with interest upon the insect, whose instinct is so perfect and sure in all its operations; when it makes them see beauty in the frail loveliness of the flower, which now they crush beneath their feet; when it leads them to examine the rich plumage or listen to the song of the bird, instead of destroying it with wanton cruelty, it renders them a service which cannot be over-estimated; it opens fountains of enjoyment for them, which will never cease to flow.

THE POOR BOY.—We delight to trace the progress of genius, talent and industry in humble life. We dwell with pleasing emotion on the character and conduct of individuals, who, from a 'low estate' of obscurity and poverty, have raised themselves by their own native energy, to affluence and stations of respectability and renown. Our country is full of examples of this description. They fall under our observation every day. Gideon Lee was once a poor boy, and in the occupation of a tanner. He is now in affluent circumstances, recently Mayor of New York, and at present a member of Congress. Charles Wells, late Mayor of Boston, was a journeyman mason. Samuel T. Armstrong, the acting Governor of Massachesetts, and at the head of several philanthropic institutions, was once a journeyman printer. There are those living who recollect Geo. Tibbetts, as a day laborer, and know him now as a gentleman of wealth, influence, and enterprise—the Mayor of the city of Troy. Stephen Warren, the well known and esteemed President of the Troy Bank, rich in this world's goods, and rich, too, in public spirit and deeds of benevolence, came from an obscure town in Connecticut, pennyless, a shoemaker. Such too, (a humble shoemaker) was Robert Yates, late Chief Justice of this State. 'Perseverance, energy, industry, moral worth, produced this pleasing consummation of human wishes.'—*N. Y. Mes.*

The Complete Farmer & Rural ECONOMIST,

BY Thomas G. Fessenden, Editor of the New England Farmer, second edition, revised, improved, and enlarged, just published and for sale at the Rochester Seed Store.

This work is got up in superior style, published on fine paper with new stereotyped impression, and is decidedly the neatest thing of the kind yet published in this country. Booksellers and others supplied by the dozen at the trade price.